George B. Radan
October 23, 1979

Synopsis - Dossier

Frontier Chemical Waste Process, Inc.
Town Line Road & Beach Road, Town of Pendleton, Niagara Co., N.Y.

This professional waste disposal firm and its Pendleton site was initially brought to EPA's attention by the Interagency Task Force Draft Report on Hazardous Wastes (March 1979).

The site, also known as Quarry Lake, has a surface area of 22 acres and is 15 feet deep. An average 3 to 6 foot high berm surrounds the lake to prevent accidental wastewater discharge into the nearby Bull Creek and neighboring wetlands. The above named firm owns the site, which is inactive since 1976. It was in operation from 1956.

The site is adjacent to Bull Creek, which is a tributory to the Tonawanda Creek which flows into the Niagara River.

The Task Force report does not give any information covering the underlying geology or aquifer.

The firm received waste from a number of generators and filled the Quarry Lake with partially neutralized chemicals bringing the pH of the lake to about 3. It also contains a number of heavy metals in solution (Cu, Fe, Cd, Ni, Zn) as well as ammonia. Composition of the bottom sludge was not yet analyzed. Lots of material was incinerated on site.

There is the possibility of overflow of the lake and an accidental release may cause flooding impairing the wetlands vegetation. Odors are an additional problem, but there is no imminent or potential health hazard at present.

In order to release wastewaters (after proper treatment), that is to discharge treated effluent from the Quarry Lake into the Bull Creek the firm has to request and obtain the SPDES permit, but failed to do so.

George B. Radan
12/27/79

I. Summary of Site Report

Frontier Chemical Waste Process, Inc.
Pendleton, Niagara County, New York

Mr. L.R. Moriarty, P.E., Sanitary Engineer, of our S&A Division Rochester Program Support Branch, visited the Frontier site in Pendleton on November 26 and 28, 1979. This site spreads over 80 acres, of which a waste pond ("Quarry Lake") occupies 20-22 acres of water with a depth to 17 feet. The pond is an abandoned clay pit, where the clay layer reaches a thickness of up to 35 feet. The first aquifer is about 70 feet below the surface. From appearance of the site and due to the permeability of the soil, the water table is virtually at the surface. The lagoon is triangular in shape (see Plot Plan) and the land is relatively flat, with poor surface drainage. Much of the surrounding area, and not only the Frontier site, were moderately flooded at the time of Mr. Moriarty's visits and the nearby Bull Creek was out of its banks due to recent rains.

The site is inactive since 1975 and is practically abandoned. The buildings on site are all open, but the area is fenced. In the past this site was used to neutralize metal-plating waste and for storage of waste oil and chemicals in drums. Only bulk lots of liquid waste from tanker trucks were neutralized. Drums were not opened. They were stored until reshipped. Waste oil was processed and reshipped. The liquid waste, after being neutralized, was dumped into the pond. In 1959, Frontier had a permit for dumping the supernatant and sludge into the lagoon, with excess liquid running off. In 1973, NYDEC stopped this practice. All the waste is now in the pond, in the form of dissolved solids, having a low pH (about 3), and metal sludges. The company estimates the volume to amount to 100-150 million gallons.

Private residences and several small businesses are located in the vicinity of the site (see Plot Plan), some as close as 100-200 feet, and others up to 1,300 feet away. On the Beach Ridge road, an old railroad bed separates the site from homes. The raised bed separates the drainage areas directing any spills or surface drainage away from homes toward Bull Creek, which is a tributary to the Tonawanda Creek, which flows into the Niagara River (see Map). Beyond homes much of the area is farm and wetlands. Drinking water comes from a public supply. Older homes may have own wells.

Chemical analyses of the ponds contents were run for a number of years by NYDEC and also private firms. Besides the acidity factor, many dissolved metals were found, among others iron, copper, nickel, chronium, zinc, etc, as well as high TDS (Total Dissolved Solids), sulfates, ammonia, chemical oxygen demand (COD), biological oxygen demand (BOD), oil and grease.

There is the possibility of overflow of the lake and an accidental breach of the berm may cause flooding impairing the wetlands vegetation. However, there is no imminent or potential health hazard at this stage.

II. Summary of Proposed Remedial Actions

Frontier has hired RB MacMullin Associates, a Niagara Falls engineering firm to develop clean-up plans for the pond. The NYDEC requested work schedule and will

review, approve or disapprove plans as submitted, and will issue necessary permits (SPDES and others). The most vital plans are the treatment of contaminated waste water in the pond, its subsequent discharge into the Bull Creek, then covering the pond with soil and grading of the site. The discharge may prove to be a major stumbling block, as the Bull Creek cannot hydraulically handle all the waste under all conditions all year round. A restricted flow may cause the lagoon to be drained for years to come. Mr. Moriarty suggests that serious consideration should be given to an alternative way, namely to have a temporary pipe line installed going into Tonawanda Creek, which could absorb up to 1.5 million gallons/day of treated waste. It would take just about 100 days to drain the whole lake. He also agrees that treating the sludge with sulfur compound to tie up metals is a good and sound plan. In conclusion he states that this is a problem area, with a significant pH of the lagoon, which should be raised to about 8-8.5 before discharge. If the old buildings and tanks were removed, the pond neutralized and sludge stabilized, covered with a blanket of clay and dikes removed, the pond area could become a viable asset to the community.

In October 1979, the Town of Pendleton considered legal action to force Frontier to speed up the clean-up, as agreed upon. The Pendleton Community would not like to have on hand another Love Canal. However, no known law suits are pending against Frontier at this time.

In my up-date on November 20, 1979, I mentioned that the firm has commitment for $0.5 million for the clean-up and that the State is not forcing the issue (in order not to press the firm into bankrupcy).

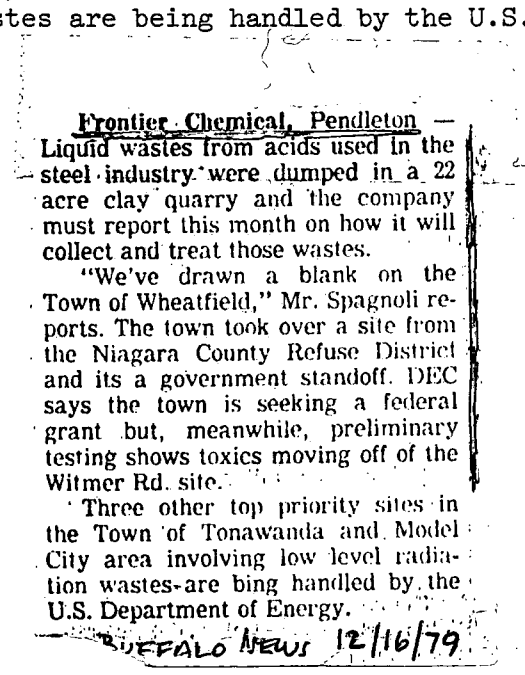
Recommendation: EPA to monitor State.

The Buffalo News - 12/16/79

Frontier Chemical, Pendleton - Liquid wastes from acids used in the steel industry were dumped in a 22 acre clay quarry and the company must report this month on how it will collect and treat those wastes.

"We've drawn a blank on the Town of Wheatfield," Mr. Spagnoli reports. The town took over a site from the Niagara County Refuse District and its a government standoff. DEC says the town is seeking a federal grant but, meanwhile, preliminary testing shows toxics moving off of the Witmer Road site.

Three other top priority sites in the Town of Tonawanda and Model City area involving low level radiation wastes are being handled by the U.S. Department of Energy.



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BUFFALO NEWS 12/16/79

George B. Radan
11/07/79

(?) GENESIS ID # NYD 000514133
THIS SITE "MAY BE" THE (FORMER) WASTE PROCESS ID # NYD 980535504

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Frontier Chemical Waste Process

Pendleton Site

August 20, 1979

COMMENTS

Along with checking the past working area for the site - Mr. Paul Foersch of D.E.C. requested we check the south east portion of the site. The reason for additional investigation is that D.E.C. has reason to suspect that material may have been burned.

SUMMARY

Many years ago Frontier did establish a landfill in the south east area of the site. The Niagara County Health Department upon finding landfill had material removed and the dug out area filled in. The above does not discount that other landfilling did not occur. The above is reported upon the idea that this closed up landfill may be the reason for the suspected buried materials.

A large portion of the site south and next to Quarry Lake has become a marsh and is so heavily grown over with cat tails it could not be entered. This area for the most part was open land many years ago. The remaining open areas and the edge of the marsh was walked. The open areas were very muchg grown over with tall weeds and close inspection was not possible. I found however a 30' X 20' area of ground amber in color which supported no vegetation. The smelling of the ground disclosed no odor. With the change in the outline of the site it could not be established by viewing if the amber ground area is the location of the

Frontier Chemical Waste Process

Pendleton Site

August 20, 1979

closed landfill area. It most certainly is the general area in which the landfill had been built.

The storage tanks numbered 1,2, and 3 have 1' to 3' of sludge material remaining. The 2 railroad tanker that were 3/4 full of liquid material now have 1' to 3' of sludge remaining. The two much smaller tank next to and east of railroad storage type tanker have 1' to 2' of liquid material . The amount of material in storage tank south of main plant buidling appears by sound testing to be ½ full of liquid materials.

The ground area surrounding tank 1,2, and 3 and the railroad tankers is much soaked up with materials as ~~has~~ WAS the contents of the tankers.

The large pile of scraped of ground from past drums storage areas and staging area remains. The pile is a mixture of chemical spills, fly ash and earth. The amber pond of liquid surrunding this pile also remains. The pond is a mixture of surface water and leaching from said pile. There was no wind this day and no odor were to be noticed. The drainage ditch in the area appeared ~~clean~~ CLEAR of leachate. Mr. Sam Campagna - Plant Manager for Frontier, was with me at the time of the inspection.

Mr. Campagna claims they have pumped as much liquid as possible from tanks #1, 2, and 3 railroad tankers and the two smaller tanks. The tanks are to be closed up and simply left in place for the present time. The tank east

Frontier Chemical Waste Process

Pendleton Site

August 20, 1979

COMMENTS

of main plant building is to check out and pumped out is needed. Mr. Campagna was not presently aware of any current action to be taken regarding scrap pile of material and spill ground areas.

ARP:rmd

Frontier Chemical Waste Process Inc.

September 18, 1979

COMMENTS

Building 12 A

The facilities and operation as viewed disclosed no problem to Public Health. A new Detrex distillation still is presently being installed.

Building 12

The amount of sludge drums in storage is presently 167. The 160 Sodium Methylate drums formerly in storage are now upon the shipping dock awaiting shipment to a buyer. The 5 Vats which hold 3500 gallons each remains filled with aguious waste. The vats are facilities left from the former owner. The integrity of the vats would be a point in question. The brick work surrounding vats is in poor condition and the cellar or below ground area of the Vats is flooded with surface water up to ground level.

Building 22

The operation to pump Solvent drums only in back in service for this location. The vacumn truck has for the past month or so has been performing this operation. There are 116 Solvent drums in the building for pumping into the holding tank.

Building 50

The facilities and operation were found to be such that problem to public health were not noted.

Frontier Chemical Waste Process Inc.

September 18, 1979

COMMENTS

Building 27

The north east portion of the build has a large amount of sludge in storage. The sludge has been removed from aqueous waste concrete lagoon which is part of the water plant operation. The remaining portion of the building has at least 500 drums of solvents and sludge in storage. The amount of which maybe solvents of sludge is not known.

Building 27 A

Access to 27 A is not possible as door into area is from building 27. The door is hidden behind sludges as stated " ~~Building 27~~" above.

Outside storage Area #2

No drums presently in storage.

Outside storage Area #3

The amount of 368 solvent drums are in storage. The area has not really change in that these are the same drums as been have present for a very long period of time.

Outside storage Area #4

A 144 sludge drums are presently in storage.

Outside Storage Area #5

The area has 72 drums to be process and 24 processed drums in storage.

Building 52

The four Concrete dumping stations and holding vat were

each filled close to capacity. The current operation is one vat recieves and holds water waste, one vat receives and holds aqueous waste and two vats receive and hold waste oils. The building had in storage 16 oils, 14 aqueous and water drums. A storage area outside the east side of building had 104 latex and 32 waste oil drums.

Tank Area A

The vac truck continues to replace the topping off of sludge drums formerly done from this area. The area disclosed no problem which should be noted.

Tank Area B

The veiwing of facilities and operation disclosed no problem in regards to public health.

Tank Area C

The facilities and operation as viewed found no present problems to public health.

Tank Area D

The veiwing of area found no problem to be noted regarding public health.

Tank Area E

The veiwing of area found it to be suitable in regards to public health.

Concrete Water Treatment Plant Lagoon

The lagoon is filled to capacity but the top portion as can be seen is in a liquid state. The past reports have

COMMENTS

indicated that the area was filled with sludges. The sludges have since been removed and are in storage within Building 27. There is no problem in regards to Public Health to be noted. A concrete pad was being poured next to the east wall of the lagoon to receive a filter press in the near future.

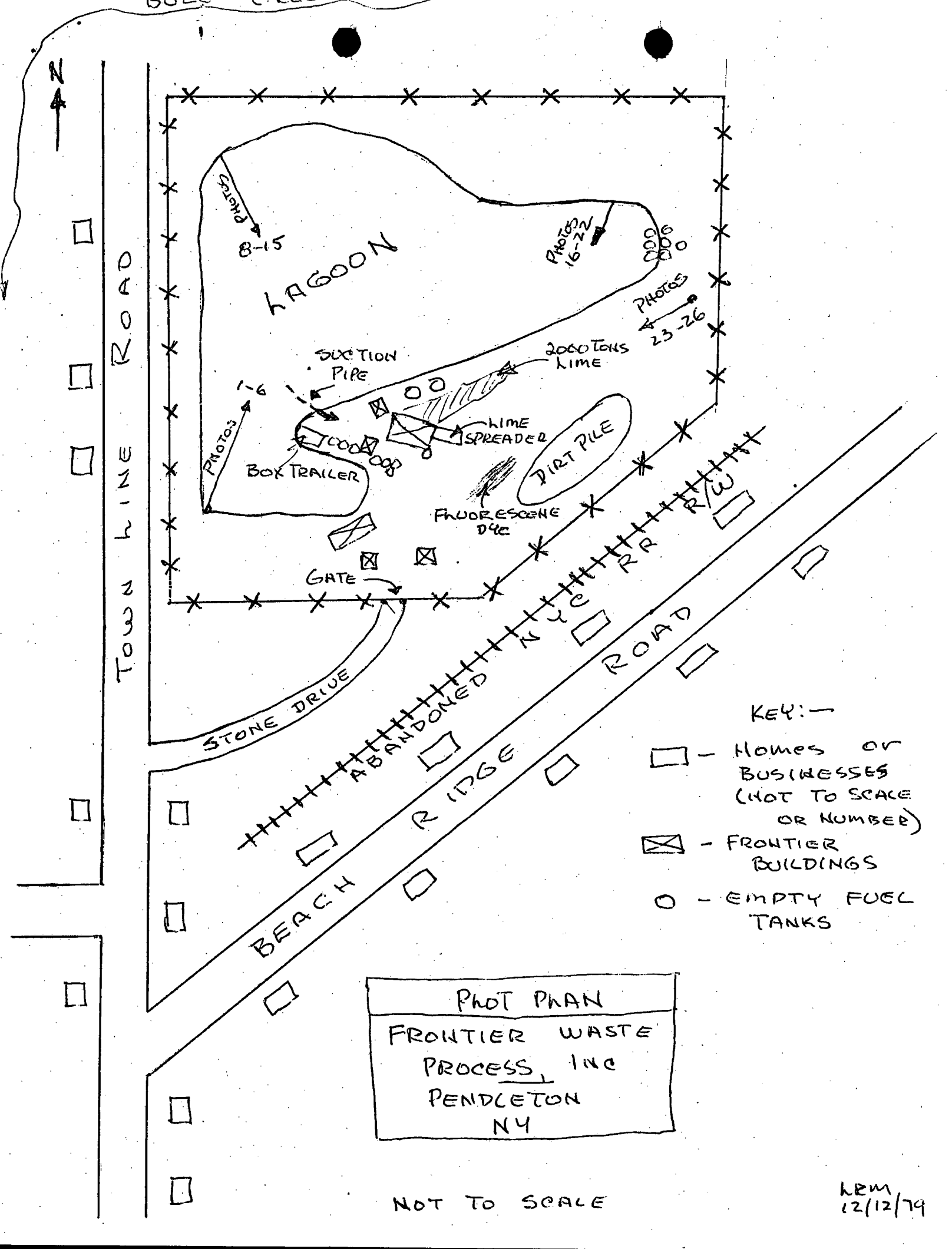
COMMENTS:

The spills, saturated ground areas and pooling of liquids as were noted in many past reports remains.

The main roadway of the plant has been given a asphalt binder coat and stoned to prevent pooling and mud conditions.

The past outside storage area #1 which had a concrete pad and berm constructed now has installed one 20,000 gallons, one 12,000 gallons and two 17,000 fiber type tanks. The berm is said to be so designed to be able to hold 20,000 gallons.

ARP:rmd


N
TOWN LINE ROAD
LAGOON
PHOTOS 8-15
PHOTOS 16-22
PHOTOS 23-26
SUCTION PIPE
2000 TONS LIME
PHOTOS 1-6
LIME SPREADER
BOX TRAILER
DIRT PILE
FLUORESCENE DYE
GATE
STONE DRIVE
ABANDONED N.Y.C. R.R. R/W
BEACH RIDGE ROAD
KEY:—
— HOMES OR BUSINESSES (NOT TO SCALE OR NUMBER)
— FRONTIER BUILDINGS
O — EMPTY FUEL TANKS
PHOT PHAN
FRONTIER WASTE PROCESS, INC
PENDLETON NY
NOT TO SCALE
KBM 12/12/79

FRONTIER CHEMICAL
PENDLETON

10/31/79 JOHN BEECHER, NYDEC, BUFFALO (FTS 8 437 4411 - Senior Sanitary Engineer was contacted 716 842 5041)
The main concern is still the Quarry Lake's level, very close to the top of the dike. May overflow - unless treated. The firm must apply for discharge permit, so that decontaminated waste waters can be released into Bull Creek.
Will receive up-dated correspondence on this site.

11/1/79 SITE INSPECTION VISIT RECOMMENDED BY THE H.W. EXECUTIVE COMMITTEE (POSSIBILITY OF OVERFLOW & CONSEQUENCES)

11/5-11/6 Visited NYDEC, Region 9, Buffalo, N.Y. and received the following info. from Mr. John Beecher, P.E., Young Erk, Chem. Eng. and Patience Dowd, . There were a number of visits by state inspectors to the site (June 8, June 27, July 26, 1979) - The main concern is still the level of lake close to the dike/berm (barely 1½ - 2 feet below the top of berm & there is a wind factor, waves do form and may overflow. Mr. Beecher said that an engineering report from the consulting firm of Bill Abrams was delayed. The principal Mr. Abrams had to undergo chemo-therapy, so the report is now expected in some 2 weeks. Also Mr. Beecher has drafted a consent order, which will allow the discharge (after the clean-up treatment) into the river. The pH has to be adjusted to ≥ 6 and the dissolved solids lowered to 2000 mg/l. Even this will have to be diluted to come close to even a normal stream content of about 750 mg/l.
The firm has committment for $0.5 million for the clean-up and the State is not forcing the issue (in order not to press the firm into bankruptcy). Once the permit is issued, to empty the lake, will take some 3 to 4 years. Beneath the lake there is good clay. New wells and borings were put in. The firm was supposed to supply plans for application of PART 360 (expansion plans), but has not done so (Nov. 1, 79).

FRONTIER CHEMICAL PENDLETON

11/20/79 Returned call to Mr. Walter Andrews, EPA ROCHESTER (8 473-6839) who informed me of the impending visit of to the site by Fred Rubel's and his group on Nov. 27-28. I mailed sent the preliminary assessment and dossier to Fred by messenger. I also told Mr Andrews that the best source of info on this site is John Beecher NYDEC in Buffalo (716 842-5824)

11/21/79 COPY OF PRELIMINARY ASSESSMENT WITH OTHER PERTINENT INFO. SENT TO 1) FRED RUBEL
2) WALTER ANDREWS - FTS 8 473-6839
CHIEF ROCHESTER PROGRAM
SUPPORT BRANCH
100 STATE ST., ROCHESTER, NY 14614

11/28/79 E.R. VISITING FRONTIER TODAY, SAMPLING?

12/10/79 REPORT ON SITE VISIT DUE - POSTPONED

12/20/79 " " " " "

1/14/80 " " " " 1/15/80: MR. MORIARTY SENDS NOTE

1/24/80 MONITOR STATE - HIGH PRIORITY INFORMING US THAT NYDEC HAS ANOTHER ALTERNATE TO DRAIN THE POND AT PENDLETON SITE: TO PUMP TREATED OR UNTREATED LIQUID WASTE TO THE PUBLIC SEWERS. THE WASTE WOULD BE FURTHER TREATED IN THE MUNICIPAL FACILITY.
STATE IS GIVING CONSIDERATION TO THIS ALTERNATIVE, BUT NO DECISION WAS MADE YET.
MIKE'S COMMENT: CRAZY! I DO AGREE!

3/26/80 T.D. Remedial action by State; EPA to MONITOR STATE

6/12/80 CALLED ROCHESTER AND ASKED ZACK DORAS TO HAVE LARRY MORIARTY FILL OUT THE NEW 10 p. SITE FORM (INSPECTION FORM). THE OLD FORM WAS RETURNED FROM HQ. IN WASHINGTON

6/19/80 REPEATED REQUEST DIRECTLY TO LARRY.

7/28/80 RECEIVED FILLED OUT NEW SITE INSPECTION FORMS AND THANKED LARRY FOR COOPERATION.

FRONTIER CHEMICAL WASTE PROCESS, INC.
Pendleton Site

Frontier Chemical's Pendleton site, also known as Quarry Lake, is a former clay borrow area located adjacent to Bull Creek and an indentified wetland near the intersection of Town Line Road and Beach Roads in the Town of Pendleton. Bull Creek is a tributary of the Tonawanda Creek which is, in turn, a tributary of the Niagara River.

Quarry Lake has a surface area of 22 acres and is 15 feet deep.

From 1959 to 1976, Quarry Lake was filled with partially neutralized chemicals. The lake now has a pH of about 3 and concentrations of the following chemicals:

Copper	9 mg./liter
Iron	60 mg./liter
Cadmium	1 mg./liter
Nickel	3 mg./liter
Zinc	1 mg./liter
Ammonia	30 mg./liter

The nature of bottom sludge in the lake has not been determined.

The major problem at the site is the potential overflow of the lake from accumulated overflow and Frontier Chemical's failure to provide adequate treatment for such overflow. A three to six foot berm around the lake and neutralization of wastes in the lake will not be sufficient to control overflow and resulting impacts. Odors also are a problem at the site.

Statement of Problem

Quarry Lake is a former clay barrow area adjacent to Bull Creek near the intersection of Town Line Road and Beach Road in Pendleton (T), Niagara County. The Lake has been filled with partially neutralized pickling wastes by Frontier Chemical between 1959 and 1976.

A protective berm surrounds the Lake, however, large amounts of accumulated stormwater within the impoundment threaten to over-flow the berm, with subsequent leaching of highly contaminated wastewater into Bull Creek and an adjacent wetland area. Of equal concern is the failure of Frontier Chemical to provide adequate wastewater treatment and its failure to obtain a discharge permit.

Extent of Problem

Quarry Lake covers an area of approximately 22 acres, with a maximum depth of about 15 feet. A berm averaging 4 feet in height completely encloses the lake in order to prevent wastewater discharge to Bull Creek and an adjacent wetland. Currently, the lake contains wastewater with a pH of 3.0 and a dissolved solids value of about 3600 mg/l, heavy metal concentrations are as follows: 9 mg/l copper, 60 mg/l iron, 1 mg/l cadmium, 3 mg/l nickel, 1 mg/l zinc and 30 mg/l ammonia. Depth and composition of bottom sludge, has yet to be defined. Waste solvents were recovered by distillation or destroyed by open burning on the site.

Health Effects

There is no known health effect attributed to the impoundment in its present condition.

Environmental Effects

There are no known environmental effects from the impoundment. Accidental release may cause flooding, impair some vegetation in the wetlands, and could cause a fish kill.

Management Status

In situ neutralization with lime is underway, but lime neutralization will not break the cuprammonium complex and therefore, will not provide suitable quality water for a permitted discharge to Bull Creek.

Aeration to reduce ammonia levels following liming is being voluntarily investigated by Frontier Chemical as a means of reducing soluble copper. Frontier Chemical will be required to apply for a SPDES permit before any wastewater is released from Quarry Lake, thus far, no SPDES permit has been applied for.

For more information, contact:

Mr. John Beecher
New York State Department of
Environmental Conservation
Region 9-Headquarters
584 Delaware Avenue
Buffalo, New York 14202

(716) 842-5824

Information Dossier prepared: April 11, 1979

FMC CORPORATION
34 Sawyer Avenue
Tonawanda

Wastes Handled

Yard trash, scrap perborate, wood pallets and fly ash

Companies Served

FMC

Disposal Sites

Seaway Industrial Park

FRIONA BROTHERS, INC.
4806 Henry Avenue
Niagara Falls

Wastes Handled

Slag, hydrated line, carbon, graphite, coal dust, solid pitch, wood and plant debris

Companies Served

Airco Alloys
Union Carbide Metals Division
Great Lakes Carbon

Disposal Sites

Union Carbide dump (now Newco Waste Systems) in Niagara Falls

FRONTIER CHEMICAL WASTE PROCESS, INC.
4626 Royal Avenue
Niagara Falls

THIS IS ANOTHER SITE!

Began operations in 1958

Wastes Handled

Waste oils, halogenated and non-halogenated solvents, acids (including nitric and sufphuric acid wastes), bases, heavy metal sludges, cyanide, sludges and filter cakes, tars and carcinogens.

Companies Served

181 companies including:

J. H. Williams
Union Carbide-Linde Div.
Twin Industries
Pratt and Lambert
Roblin Steel
Ford Motor Co.
Buffalo Color Corp.
FMC Corporation
Harrison Radiator
Shanco Plastics
Bell Aerospace
Mobil Oil
Arcata Graphics
Columbus McKinnon
Noury Chemicals
Lucidol
Allied Chemical Semet Solvay Division
Allied Chemical Specialty Chemicals Div. (Dye Plant)
Wilson Greatbatch
Westwood Pharmaceutical
Carborundum
DuPont (Niagara Falls)

Disposal Sites

Past: From 1958 to 1975, the company maintained a site on Town Line Road, Pendleton, Niagara County. Operations at that site included incinerators, neutralized distillation, oxidation and reduction (chemical) and recovery of saleable by products. An abandoned clay quarry, having a volume of approximately 108 million gallons (330 acre feet) was used to neutralize waste acids, including pickle liquor, containing iron, copper, zinc, nickel and other metals. The excess of precipitation over evaporation resulted in an increase in water elevations and a discharge into Bull Creek. This concentration of metals, as well as ammonia, exceeded effluent standards for Bull Creek. In addition, odors emanating from the pond caused complaints by neighboring residents. Odors also emanated from stored organic materials on the site. In 1976, the firm moved to its present location in Niagara Falls where tankage for storage and treatment as well as sanitary sewers for discharge of treated wastes are available. Stored drums were removed from the Town Line Road site and soil contaminated by spillage and leakage was scraped into a pile for future removal off-site to an acceptable disposal area yet to be determined. Plans for ultimate reclamation of the Pendleton facility are currently under review by the Department of Environmental Conservation.

Present: The present plant facilities are located in a former chemical production facility in the City of Niagara Falls. Wastes are received by tank truck, owned by Frontier and by contract haulers (common carriers), in drums and in bulk shipments. Frontier currently handles the following wastes:

Waste oil
Halogenated solvents
Solvents (non-halogenated)
Solvents (mixed)

Spent acids
Spent acids containing heavy metals
Spent acids containing metals
Spent acids containing organics
Emulsified oils
Spent caustic solutions
Spent sulfide and cyanide solvents
Cyanides & solvents containing heavy metals
Heavy metals and heavy metals sludges
Filter Cake and precipitates
Aqueous waste containing inorganics and organics
Waste paint and paint sludge inks
Packaged laboratory chemicals
Chemical contaminated materials (filter cartridges, clothing, sweepings, etc.)
Organic chemical-waste liquids and solids
Ammonium fluoride solution
Calcium hypochlorite
Iron sludge

After the wastes are analyzed, a recovery/treatment/ disposal format is established for the wastes. Recovery involves distillative precipitation of metallic salts, blending for fuel purposes and other methods for reutilization of valuable materials. Reuseable drums are sold to drum reconditioners. Treatment involves neutralization of acids and bases, precipitation of solids, removal of water and undesirable materials, destruction of cyanide and other steps that will permit proper disposal. Disposal practices involve landfilling of materials not considered to be toxic or hazardous (drums, pallets, packaging materials) and disposal of other solids in a secure land burial site for toxic and hazardous solids, drummed sludges and carcinogens. The primary disposal site is Newco Waste Systems in Niagara Falls. The treated liquids are discharged into municipal sewers. Liquids unacceptable for discharge are trucked from the site for either incineration or deep well injection. Incineration has taken place at Tricil Limited, Berslan, Ontario. Deep well injection is done at Ohio Liquid Disposal, in Freemont, Ohio. Certain liquids having sufficient heat value are sold as fuel.

FRONTIER PIPE CLEANING CO.

Wastes Handled

Waste lubricating oil

Companies Served

Union Carbide Linde Division (Lackawanna)

Type of Waste	Annual Quantity
1. Waste plating solution	200 gallons
2. n-Methyl pyrrole residues	10,000 gallons
3. Scrap mediums	600 gallons
4. Medium process washings	1,000 gallons
5. Mercuric gold washwater	400 gallons
6. Waste acid neutralization sludge	13,000 tons
Total	12,200 gallons 13,000 tons

SCA (Chem-Trol) hauls all of the above waste types except the waste acid neutralization sludge which is transported to SCA by Modern Disposal Services, Inc. of Model City. In addition, duPont records show that from 1973 to 1975 approximately 210 tons of residue containing chloroform and about 900 tons of carbon tetrachloride were sent to Chem-Trol for reclamation.

3. Niagara County Refuse Disposal District (Wheatfield)

DuPont used this site intermittently during the 1960's to dispose of an unknown tonnage of solid off-grade polyvinyl alcohol. DuPont transported this material to the Wheatfield site in bags.

4. Frontier Chemical Waste Process, Inc., (Pendleton)

Frontier Chemical was occasionally used to dispose of waste at their Pendleton site from the late 1960's to 1975. Frontier Chemical and duPont transported waste to this site in five gallon cans or bottles and 55 gallon drums. The waste consisted of miscellaneous small quantities of precious metals and solvents.

D. Miscellaneous Waste Disposal Practices

Waste oil has been handled by Booth Oil Company of North Tonawanda (1950 to 1970) and Southgate Oil Services, Inc. of Elma (1973 to present). In addition, waste oil was stored at the duPont plant form 1970 to 1973 and prior to 1950, waste oils were generally disposed of at Necco Park.

From 1950 to 1961, Booth transported an unknown quantity of "Ucon" oil (non-PCB) and from 1961 to 1970, they hauled approximately 120 tons of oil containing Aroclor 1248 PCBs to their facility in North Tonawanda. The ultimate disposition of these oils is not known.

Southgate Oil has hauled an unknown quantity of drummed waste oil to their facility in Elma for reclamation.

Prior to 1940 to 1970, the company disposed of bulk quantities of industrial wastes in trenches on approximately 15 acres of plant property. The types of wastes disposed of include arsenical wastes, sulfur compounds, sludge from the dithiocarbamate wastewater lagoon, carbofuran, incinerator ash and off-grade products. FMC indicated that it could not estimate the amounts of wastes disposed of on-site, However, the Task Force has learned that more than 250 tons of arsenical wastes were dumped on-site and that DDT, benzene hexachloride and organic phosphates were also disposed of on premises. FMC also has operated a disposal site in Orleans County for similar wastes.

Since 1973, SCA, Modern Disposal Service and FMC Corporation itself have hauled waste kerosene with traces of pesticides (19,900 gallons total) spent caustic (21,700 gallons total), laboratory chemicals (280 drums total), furadan aqueous sludge (10,400 gallons total) furadan and clay (4,000 gallons), plant floor sweepings and dust house bags (approximately 1,300 tons total), mixed liquid pesticide (4,300 gallons total), polyram and clay (13,200 gallons total) and ferric hydroxide sludge with traces of arsenic (176 tons total) to the SCA facility in Porter.

Since 1977, Newco Waste Systems, Lorber Trucking, Modern Disposal Service and FMC Corporation have hauled waste kerosene with traces of pesticides (3,950 gallons total), packaged laboratory chemicals (225 drums total), furadan sludge (5,300 gallons total), plant floor sweepings and duct house bags (236 tons total), ferric hydroxide sludge with traces of arsenic (380 tons total), acidic calcium sulfate sludge and water (9,300 gallons total), spent caustic (201 tons total), compacted empty pesticide containers (36 drums total), and polyram and clay (3,400 gallons total) to the Newco site in Niagara Falls for disposal.

Frontier Chemical Waste Process, Inc., in 1978, transported 18,290 tons of process wastewater containing calcium sulfate, sodium sulfate, ammonium sulfate and trace quantities of contaminants from dithiocarbamate processes mixed with regenerant from surface water treatment to Frontier's facility in Niagara Falls. In addition, Wizard Method, Inc. of North Tonawanda has hauled similar material cleaned out from evaporator heat exchange tubes to Newco.

Finally, since 1970, FMC has hauled dry waste including ash from incinerated paper, paper waste from cartons, spent containers and packaging materials containing small amounts of clays, talcs and fillers in bulk quantities, to the Niagara County Refuse District site in Lockport.